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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,013	07/19/2005	Yuxiang Zhou	051082-0102	2752
22428 7590 07/31/2007 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER AJIBADE AKONAI, OLUMIDE	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 07/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,013	Applicant(s) ZHOU, YUXIANG	
	Examiner Olumide T. Ajibade-Akonai	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 2-4 of Remarks, filed 14 May 2007, with respect to the rejection(s) of claim(s) 1-10 under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Nguyen 6,947,758**.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, 5, 7, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Nguyen 6,947,758**.

Regarding **claims 1 and 7**, Nguyen discloses a method for assigning (and searching) a mobile subscriber roaming number (TMSI, see col. 10, lines 35-37), wherein in a Visitor location Register (VLR 740, see fig. 7, col. 10, lines 7-14), the mobile subscriber roaming number is managed by a plurality of Visitor Location Register modules (VLR 750,760,770, see fig. 7, col. 10, lines 7-14, 32-44), characterized in that: said mobile subscriber roaming number (TMSI, see col. 10, lines 35-37) comprises a

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Visitor Location Register module number (TMSI-Q, TMSI-R, TMSI-N with the VLR address embedded in the numbers, see fig. 7, col. 10, lines 45-67, col. 11, lines 1-4), and said Visitor Location Register module number is utilized to directly determine (and find) the correspondence relationship between said assigned mobile subscriber roaming number and the Visitor Location Register module (see col. 10, lines 45-67, col. 11, lines 1-4) in said Visitor Location Register that manages said mobile subscriber roaming number (VLR 750,760,770, see fig. 7, col. 10, lines 7-14, 32-44).

Regarding **claim 4**, as applied to claim 1, Nguyen further discloses wherein said visitor location register is a multi module clustered distributed real time database (see fig. 7, col. 10, lines 7-14).

Regarding **claim 5**, as applied to claim 1, Nguyen further discloses wherein the length of the module number of said visitor location register module may be one bit or multiple bits (see col. 10, lines 45-66).

Regarding **claim 8**, as applied to claim 7, Nguyen further discloses the said method comprising the following steps: based on said mobile subscriber roaming number, a Visitor Mobile Switching Center initiates a query to the Visitor Location Register module corresponding to said mobile subscriber roaming number (see col. 10, lines 45-67, col. 11, lines 1-4); said Visitor Location Register module searches the information of corresponding mobile subscriber based on said mobile subscriber roaming number and returns it to said Visitor Mobile Switching Center (see col. 10, lines 45-67, col. 11, lines 1-4).

Regarding **claim 10**, Nguyen further discloses wherein said searching step further comprising: said Visitor Location Register module obtains the VLR sub-number in said mobile subscriber roaming number, and obtains the information of said mobile subscriber in the record of the mobile subscriber roaming number information table corresponded to said VLR sub-number and returns it to said Visitor Mobile Switching Center; said Visitor Location Register module releases said VLR sub-number (see fig. 7, col. 11, lines 1-14).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 2, 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nguyen 6,947,758** in view of **Lahtinen 6,148,200**.

Regarding **claims 2 and 9**, as applied to claims 1, 7 and 8, Nguyen further discloses said Visitor Location Register forwards a request to one of the Visitor Location

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Register modules (see col. 11, lines 1-14); said Visitor Location Register module records the information corresponding to said mobile subscriber and obtains its corresponding VLR sub-number (TMSI-R+1, see col. 11, lines 1-14); said Visitor Location Register module generates a mobile subscriber roaming number (see col. 11, lines 1-14) said mobile subscriber roaming number comprising said VLR sub-number (see col. 10, lines 45-67), the module number of said Visitor Location Register module (see col. 10, lines 45-67, col. 11, lines 1-4). Nguyen does not specifically disclose the steps of, said Visitor Location Register receives from a Home Location Register a request to assign a roaming number for a mobile subscriber; said mobile subscriber roaming number comprises a country code, and the number of a Mobile Switching Center where said mobile subscriber is in, said Visitor Location Register module returns said mobile subscriber roaming number to said Home Location Register.

Lahtinen, however discloses said Visitor Location Register (physical VLR see figs. 2 and 3, col. 3, lines 1-5) receives from a Home Location Register (HLR see fig. 3, col. 3, lines 13-20) a request to assign a roaming number (provide roaming number request, see fig. 1, col. 1, lines 52-56) for a mobile subscriber (MS, see fig. 3);; said mobile subscriber roaming number comprises a country code (NCC, see col. 3, line 40), the number of a Mobile Switching Center where said mobile subscriber is in (NDC, see col. 3, line 41); said Visitor Location Register module returns said mobile subscriber roaming number to said Home Location Register (see col. 1, lines 59-67, col. 3, lines 40-54).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Lahtinen into the system of Nguyen for the benefit of reducing the load of the visitor location registers.

Regarding **claim 3**, as applied to claim 2, Nguyen further discloses recording step further comprising: said Visitor Location Register module records the information of said mobile subscriber in an idle record in a mobile subscriber roaming number information table, and obtains the VLR sub-number corresponding to said record (see fig. 7, col. 10, lines 45-63).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nguyen 6,947,758** in view of **Holmes 6,039,624**.

Regarding **claim 6**, as applied to claim 1, Nguyen discloses the claimed limitation except wherein the length of said mobile subscriber roaming number is not longer than 15 bits.

In an analogous art, Holmes discloses wherein the length of said mobile subscriber roaming number is not longer than 15 bits (see col. 4, lines 62-67, col. 5, line 1).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Holmes, by have a TMSI of length 4, 6, or 10 bits, into the system of Nguyen for the purpose of maximizing the number of TMSI numbers that may be transmitted in a paging slot.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olumide T. Ajibade-Akonai whose telephone number is 571-272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER

7/26/07